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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/792,157	03/03/2004	Jean-Louis Lalonde	143.008US01	3709

7590 10/18/2007
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EXAMINER

WANG, BEN C

ART UNIT	PAPER NUMBER
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2192

MAIL DATE	DELIVERY MODE
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10/18/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/792,157

Applicant(s)

LALONDE ET AL.

Examiner

Ben C. Wang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

1. Applicant's amendment dated July 31, 2007, responding to the Office action mailed February 2, 2007 provided in the rejection of claims 1-25, wherein claims 1, 16, and 22 are amended.

Claims 1-25 remain pending in the application and which have been fully considered by the examiner.

Applicant's arguments with respect to claims rejection have been fully considered but are moot in view of the new grounds of rejection – see *Joshua Duhl* - art made of record, as applied hereto.

Claim Rejections – 35 USC § 103(a)

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Joshua Duhl (*Rich Internet Applications, November 2003, IDC*) (hereinafter 'Duhl' - art made of record) in view of Michel K. Bowman-Amuah (Pat. No. US 6,601,234 B1) (hereinafter 'Bowman-Amuah')

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3. **As to claim 1** (Currently Amended), Duhl discloses a distributed fabrication system for creating, while promoting strategic alignment between information technology departments and business units' objectives (e.g., P. 23, 3rd Par. – The challenge was to create a prototype platform in two months that would allow a business manager to quickly develop and change, and centrally deploy new financial products, promotions and conditions As part of the effort, they worked with the product group to prototype a visual rule construction tool that would allow a line of business manager to create rules himself without the need to go to the IT department), a business application compatible with XInternet technologies via a communication network, the fabrication system (e.g., P. 1, 2nd Par. – Macromedia® has developed technology and tools that enable new kinds of engaging, highly interactive, applications and user experience. Using a series of case studies, this White Paper examines Rich Internet Applications (Xinternet technologies) – what they are, why they're needed, who can use them and the business benefits available to companies that employ them; P. 26, 4th Par. – To meet the needs of IT organizations these tools will have to allow them to continue to work they way that they already do and not force them to rip out and replace legacy technology. These new RIA tools will need to provide the features that enhance IT developer's abilities to be more creative and to accomplish RIA development with same or less effort than the tools they use to create other types of applications; What is required are the tools that can help developers in Global 2000 companies achieve these objectives without encountering the difficulties or trying to write RIAs using just 3GL code,

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....; P. 27, 2nd Par., Lines 7-10 – Macromedia® is delivering technology for rich Internet applications now and in the first half of 2004 that leverages the ubiquity and cross platform and device support of the Flash player, and works with the hardware and infrastructure that already exists) comprising:

- a client workstation connectable to the communication network, the workstation having a browser interface (e.g., P. 8, 1st Par. – An RIA (Rich Internet Applications) provides a strong technical platform that effectively restores the client's abilities to be more like that of desktop software applications, or a traditional client in a client/server system);
- a software factory displayed in the browser interface through which a user fabricates the business application in response to business need specifications; the software factory being displayed in the browser interface from factory building files (e.g., P. 8, 3rd Par. – Because of their architecture and capabilities, RIAs have the potential to fundamentally change the way companies engage and interact with their Web users, leading to more effective user experiences with top- and bottom-line results), the software factory comprising:
 - a first tool for defining a solution containing the business application, the first tool comprising components for entering solution parameters (e.g., P. 16, 4th Par., Lines 7-10 – XML houses the bulk of the product information, which is all now managed in a content management system allowing *FootJoy®* to more easily update the product content or change the formulas and criteria weights used in the

recommendations; P. 23, 3rd Par. – As part of the effort, they worked with the product group to prototype a visual rule construction tool that would allow a line of business manager to create rules himself without the need to go to the IT department);

- a third tool for validating the solution, the third tool comprising components for previewing the solution online by automatically generating a working prototype of the business application using dynamic database simulation means for testing the working prototype of the business application and communication components for feedback messages between users testing the working prototype of the business application and users constructing the solution (e.g., P. 7, 1st Par. – Rich Internet Applications (RIAs) provide this Web application solution. Macromedia® defines RIAs as combining the best user interface functionality of desktop software applications with the broad reach and low-cost deployment of Web applications and the best of interactive, multimedia communication. Specifically, the best of the desktop includes providing an interactive user interface for validation and formation, fast interface response times with no page refresh, common user interface behaviors such as drag-and-drop and ability to work online and offline; P. 16, 4th Par., Lines 7-10 – XML houses the bulk of the product information, which is all now managed in a content management system allowing *FootJoy*® to more easily update the product content or change the formulas and criteria weights used in the

recommendations; P. 23, 3rd Par. – As part of the effort, they worked with the product group to prototype a visual rule construction tool that would allow a line of business manager to create rules himself without the need to go to the IT department); and

- a fourth tool for generating code offline, said code forming an initial and operational version of the business application to be supplied as a normalized input to a regular desktop development system (e.g., P. 7, 1st Par. – Rich Internet Applications (RIAs) provide this Web application solution. Macromedia® defines RIAs as combining the best user interface functionality of desktop software applications with the broad reach and low-cost deployment of Web applications and the best of interactive, multimedia communication. Specifically, the best of the desktop includes providing an interactive user interface for validation and formation, fast interface response times with no page refresh, common user interface behaviors such as drag-and-drop and ability to work online and offline); and
- a web server connectable to the communication network, the web server providing the factory building files and controlling the software factory displayed in the browser interface of the workstation (e.g., P. 8, 1st Par. – An RIA provides a strong technical platform that effectively restores the client's abilities to be more like that of desktop software applications, or a traditional client in a client/server system; It fits into the traditional n-tier development process and integrates into legacy

environments to extend existing applications without the need to rework then).

Duhl does not explicitly disclose a second tool for constructing the solution using business models in relation with the solution parameters, the second tool comprising components for designing basic characteristics of the solution and a business domain model of the business application having a main entity and related entities, the main entity establishing relationships with the related entities, the main entity and the related entities having attributes and actions, the second tool also comprising components for designing a menu of the business application, specific functions of the business application, and functional descriptions of the business application.

However, in an analogous art of *Attribute Dictionary in a Business Logic Services Environment*, Bowman-Amuah discloses a second tool for constructing the solution using business models in relation with the solution parameters (e.g., Col. 174; Lines 57-62), the second tool comprising components for designing basic characteristics of the solution (e.g., Fig. 42, elements of "Other Patterns", "Other Frameworks"; Fig. 50, element 5008) and a business domain model of the business application having a main entity and related entities (e.g., Fig. 42, element of Business Entity Component; Fig. 50, elements of "Workflow", "Class Diagram"), the main entity establishing relationships with the related entities (e.g., Fig. 104; Col. 232, Line 53 through Col. 233, Line 49), the main entity and the related entities having attributes and actions (e.g., Col. 10, Line 56 through Col. 11, Line 2), the second tool also comprising components for designing a

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menu of the business application (e.g., Fig. 40, elements 3906, 4006, 3908), specific functions of the business application (e.g., Fig. 45; Col. Lines 30-31, 58-67), and functional descriptions of the business application (e.g., Fig. 49, element of Detailed Design).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to combine the teachings of Bowman-Amuah into the Duhl's system to further provide a second tool for constructing the solution using business models in relation with the solution parameters, the second tool comprising components for designing basic characteristics of the solution and a business domain model of the business application having a main entity and related entities, the main entity establishing relationships with the related entities, the main entity and the related entities having attributes and actions, the second tool also comprising components for designing a menu of the business application, specific functions of the business application, and functional descriptions of the business application in Duhl system.

The motivation is that it would further enhance the Duhl's system by taking, advancing and/or incorporating Bowman-Amuah's system which offers significant advantages for software patterns and more particularly to a facility for encapsulating architectural mechanisms within business objects as once suggested by Bowman-Amuah (e.g., Col. 1, Lines 19-21).

4. **As to claim 2** (incorporating the rejection in claim 1) (Original), Duhl discloses the distributed fabrication system wherein the first, the second, the third

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and the fourth tools of the software factory use a business model to assist with creation of the business application to isolate business application definitions from implementation of the business application on any specific technology platform (e.g., P. 26, 5th Par., 1st through 3rd bullets – Allow developers to write applications using familiar development models to utilize and extend their current skills without requiring them to adopt entirely new or different skills; Use standard and standards-based technologies; Use industry specific programming models and patterns; P. 29, Figure 4 – Macromedia® Flex Presentation Tier – XML declarative language for application definitions, J2EE® and .NET®).

5. **As to claim 3** (incorporating the rejection in claim 1) (Original), Bowman-Amuah discloses the distributed fabrication system (e.g., Figs. 10-12; Col. 31, Lines 52-67) wherein the first tool further comprises importing means for importing a business object and data model (e.g., Col. 115, Lines 27-32; Col. 183, Lines 9-15) for constructing the solution and to design the basic characteristics of the solution, the application business domain model specific functions (e.g., Col. 13, Lines 30-38; Col. 140, Lines 56-65), and the application functional descriptions (e.g., Col. 174, Lines 57-62).

6. **As to claim 4** (incorporating the rejection in claim 1) (Original), Bowman-Amuah discloses the distributed fabrication system (e.g., Figs. 10-12; Col. 31, Lines 52-67) wherein the code forming the business application comprises an applicative framework supplying a generic dynamically adaptable N-Tier client-

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server-object-oriented applicative infrastructure (e.g., Col. 32, Lines 45-47; Col. 10, Lines 45-55) constructed on top of a third party software system infrastructure (e.g., Col. 37, Lines 39-42) to support the business application (e.g., Col. 19, Lines 34-37), the third party software system infrastructure being complemented by database management system components (e.g., Col. 51, Lines 52-55; Col. 52, Lines 17-35).

7. **As to claim 5** (incorporating the rejection in claim 4) (Original), Duhl discloses the distributed fabrication system wherein the applicative framework comprises generic adaptable software structures for the creation of the business application on any specific technology platform using a web server, a business server and a database server on which the business application is fabricated, developed, tested and deployed, the applicative framework also comprising:

- user services for managing a business application user interface, relying on a XInternet one web page application pattern (e.g., P. 26, 5th Par., 1st through 3rd bullets – Allow developers to write applications using familiar development models to utilize and extend their current skills without requiring them to adopt entirely new or different skills; Use standard and standards-based technologies; Use industry specific programming models and patterns), on a workstation having a browser interface to access the business application from the web server on which business application web services are deployed (e.g., Figure 2 – Rich Internet Application Spectrum; P. 10, 1st Par. – Figure 2 shows the spectrum of potential uses

for Rich Internet Applications. It is broad, ranging from externally facing interactive sites, to customer and partner facing applications, to internal enterprise and departmental applications), the business application user interface being a dynamic web page avoiding web page transitions for user experience (e.g., P. 1, 2nd Par. – Macromedia® has developed technology and tools that enable new kinds of engaging, highly interactive, applications and user experiences; P. 3, 5th Par. – But a new approach is needed to represent these more complex processes, one which reduces the number of steps or page-flips (avoiding web page transitions) and enables a higher degree of interactivity within the user interface), the user services comprising one web page application components library (e.g., Figure 4 – Macromedia® Flex Presentation Tier – element of 'Flex Class Library'; P. 29, 2nd Par., Lines 10-13 – *Flex* comes with a class library consisting of components such as containers, controls, etc, and managers, which are services that are commonly used and simplify the creation of rich applications) for displaying the business application user interface on the browser interface and for communicating between the business application user interface displayed in the browser interface (e.g., P. 3, 5th Par. – But a new approach is needed to represent these more complex processes, one which reduces the number of steps or page-flips and enables a higher degree of interactivity within the user interface. In many cases, a highly interactive single screen interface can represent these complex, multi-step or non-linear workflows directly and

intuitively) and the business application web services deployed on the web server (e.g., P. 9, 3rd bullet – Provide an engaging, highly interactive presentation layer to underlying Web Services; P. 21, 3rd Par. – RIAs are applicable within an enterprise for providing an integrated single screen view into legacy systems, business data visualization, e-learning and information portals, or in serving as a presentation layer to Web Services-based applications), the one web page application components library providing bi-directional communications between the workstation and the web server (e.g., P. 5, 1st Par. – What's needed is the ability to have highly interactive and locally intelligent client-side applications that can respond to user input and change their state or interface without the need for a full-page refresh or interruptive communications with a server);

Bowman-Amuah discloses the following:

- business services for managing business application logic (e.g., Fig. 12, elements of Business Logic, Directory Services) and communications between the business application web services (e.g., Col. 107, Lines 8-11), the applicative framework and the third party software system infrastructure (e.g., Col. 37, Lines 39-42), the business services being implemented on the business server (e.g., Fig. 12, elements of Information, Database), the business services comprising generic adaptable components having interface application components (e.g., Fig. 40, element 4006), core application components (e.g., Col. 24, Lines 19-24), utility

application components (e.g., Col. 36, Lines 4-7; Col. 59, Lines 14-16) and task application components (e.g., Fig. 12, element System Services – Task); the generic components being used to insure code reusability, adaptability, uniformity, isolation, stability, robustness, scalability and performance (e.g., Col. 125, Lines 46-52); and

- data services (e.g., Col. 88, Lines 46-57) for managing business application data access logic (e.g., Col. 100, Lines 62-64); and communications (Fig. 16, element Network Connections) between the business services (Col. 126, Lines 60-65; Col. 199, Lines 10-13) and the third party database management system components (e.g., Col. 52, Lines 32-34) on the database server (e.g., Col. 34, Lines 24-28) upon request of the business server (e.g., Col. 34, Lines 24-28) on which the business services are implemented, the data services comprising generic adaptable database access components (e.g., Col. 51, Lines 55-64) having database scripts (e.g., Col. 104, Lines 36-40) to automatically assist the creation of application database tables (e.g., Col. 278, Lines 30-33; Fig. 126, creates) and Stored procedures (e.g., Col. 278, Lines 50-54) required to access and manage application data on the database server.

8. **As to claim 6** (incorporating the rejection in claim 5) (Original), Duhl discloses the distributed fabrication system wherein the code generated by the fourth tool comprise an approved, operational and well-formed solution comprising the applicative framework specified from business application definitions to be supplied as a normalized input to a regular desktop development system (e.g., P. 7, 1st Par. – Rich Internet Applications (RIAs) provide this Web application solution. Macromedia® defines RIAs as combining the best user interface functionality of desktop software applications with the broad reach and low-cost deployment of Web applications and the best of interactive, multimedia communication. Specifically, the best of the desktop includes providing an interactive user interface for validation and formation, fast interface response times with no page refresh, common user interface behaviors such as drag-and-drop and ability to work online and offline).

9. **As to claim 7** (incorporating the rejection in claim 1) (Original), Duhl discloses the distributed fabrication system wherein the first tool also comprises security components to define security for business users and information technology experts access rights and roles to the solution (e.g., Table 2 – Rich Internet Application Development Profiles, 2nd Col., 3rd bullet – Security and standards are critical).

10. **As to claim 8** (incorporating the rejection in claim 1) (Original), Bowman-Amuah discloses the distributed fabrication system (e.g., Figs. 10-12; Col. 31,

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Lines 52-67) wherein the second tool comprises web services (e.g., Col. 107, Lines 8-11) to define and connect application domain entities (e.g., Col. 13, Lines 30-38; Col. 140, Lines 56-65) and the third tool comprises web services to preview, test, validate and interact with application domain objects and object links (e.g., Col. 159, Lines 32-42; Col. 171, Lines 24-28; Col. 188, Lines 47-50; Col. 51, Line 65 through Col. 52, Line 3).

11. **As to claim 9** (incorporating the rejection in claim 8) (Original), Bowman-Amuah discloses the distributed fabrication system (e.g., Figs. 10-12; Col. 31, Lines 52-67) wherein the dynamic database simulation means (e.g., Col. 284, Lines 7-10) for testing the working prototype of the business application (e.g., Fig. 2, elements 206, 208; Col. 17, Lines 46-48; Col. 143, Lines 63-64; Col. 166, Lines 2-57) comprise an XML document (e.g., Col. 41, Lines 14-48) simulating an application database, the XML document being used to add, delete and modify the application domain objects (e.g., Col. 277, Lines 29-34) and object links (e.g., Col. 159, Lines 32-42; Col. 171, Lines 24-28; Col. 188, Lines 47-50; Col. 51, Line 65 through Col. 52, Line 3).

12. **As to claim 10** (incorporating the rejection in claim 1) (Original), Bowman-Amuah discloses the distributed fabrication system (e.g., Figs. 10-12; Col. 31, Lines 52-67) wherein the database simulation means (e.g., Col. 284, Lines 7-10) for testing the working prototype of the business application (e.g., Fig. 2, elements 206, 208; Col. 17, Lines 46-48; Col. 143, Lines 63-64; Col. 166, Lines

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2-57) comprise object operation means for adding objects in a simulated database, modifying the objects in the simulated database, deleting the objects from the simulated database and finding, adding, modifying and deleting links between the objects, the object operation means being used for testing the main entity objects of the application (e.g., Col. 277, Lines 29-34; Col. 51, Lines 52-55; Col. 271, Lines 28-31), the related-entities objects of the application (e.g., Fig. 42, element of Business Entity Component; Fig. 50, elements of "Workflow", "Class Diagram"), the menu of the application (e.g., Fig. 40, elements 3906, 4006, 3908), the specific functions of the application and the functional descriptions of the application (e.g., Fig. 49, element of Detailed Design).

13. **As to claim 11** (incorporating the rejection in claim 1) (Original), Bowman-Amuah discloses the distributed fabrication system (e.g., Figs. 10-12; Col. 31, Lines 52-67) further comprising a database server (e.g., Col. 34, Lines 24-28) connectable to the communication network (e.g., Fig. 16, element Network Connections), wherein the communication components for feedback messages (e.g., Col. 171, 24-28) between the users testing the working prototype of the business application (e.g., Col. 14, Lines 15-25) and the user constructing the solution comprise collaborative functions means (e.g., Col. 119, Lines 24-27; Col. 157, Lines 65-67; Col. 69, Lines 30-36) for providing a collaboration center with the feedback messages centralized (e.g., Col. 30, Lines 41-46; Col. 49, Lines 33-36) on the database server.

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14. **As to claim 12** (incorporating the rejection in claim 1) (Original), Duhl discloses the distributed fabrication system wherein the factory building files are selected from a group consisting of HTML files (e.g., P. 23, Sec. of Embedded RIA Modules, 1st Par. – A RIA can also be used in a hybrid application consisting a Macromedia® Flash module embedded into an existing HTML page of a site or application), ASPx files (e.g., P. 29, 2nd Par. – Flex also provides a development model that will be familiar to JSP, ASP, XSLT developers), DHTML components files, programs files, assemblies files, components files, XML Documents files and Web Services files accessed (e.g., P. 29, 2nd Par. – Using MXML – the codename for a XML declarative programming language for creating and defining rich user experiences that is currently being proposed as a new XML standard – and *ActionScript*, a programming language for procedural programming, Flex allows traditional developers to utilize their existing XML and scripting skills to develop new rich Internet applications) from HTTP,S and SOAP protocols (e.g., P. 29, 1st Par. – The application uses SOAP for communications back to the server).

15. **As to claim 13** (incorporating the rejection in claim 1) (Original), Bowman-Amuah discloses the distributed fabrication system (e.g., Figs. 10-12; Col. 31, Lines 52-67) wherein the third tool further comprises components for automatically generating a functional document of the solution (e.g., Fig. 14, element 1416; Col. 53, Lines 21-27; Col. 53, Lines 46-50).

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16. **As to claim 14** (incorporating the rejection in claim 1) (Original), Duhl discloses the distributed fabrication system wherein the solution comprises a plurality of the business application (e.g., P. 9, Figure 2 – Rich Internet Application Spectrum; P. 10, 1st Par. – Figure 2 shows the spectrum of potential uses for Rich Internet Applications; It is broad, ranging from externally facing interactive sites, to customer and partner facing applications, to internal enterprise and departmental applications).

17. **As to claim 15** (incorporating the rejection in claim 1) (Original), Bowman-Amuah discloses the distributed fabrication system (e.g., Figs. 10-12; Col. 31, Lines 52-67) wherein the testing of the working prototype of the business application allows to determine a state of operability (e.g., Col. 23, Lines 1-4) and profitability (e.g., Col. 25, Lines 15-19) of the solution by following a project go/no go type workflow to reduce cost and time for project approval (e.g., Col. 116, Lines 5-7, 14-17).

18. **As to claim 16** (Currently Amended), Duhl discloses an applicative framework system supplying a generic dynamically adaptable N-Tier client-server object-oriented applicative infrastructure constructed on top of a third party software system infrastructure to support a business application compatible with XInternet technologies via a communication network (e.g., P. 8, 1st Par. – An RIA provides a strong technical platform that effectively restores the client's abilities to be more like that of desktop software applications, or a traditional client in a

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client/server system; It fits into the traditional n-tier development process and integrates into legacy environments to extend existing applications without the need to rework then), the third party software system infrastructure being complemented by database management system components, the applicative framework system comprising:

- a client workstation connectable to the communication network, the workstation having a browser interface;
- a web server connectable to the communication network (e.g., P. 8, 1st Par. – An RIA provides a strong technical platform that effectively restores the client's abilities to be more like that of desktop software applications, or a traditional client in a client/server system; It fits into the traditional n-tier development process and integrates into legacy environments to extend existing applications without the need to rework then);
- an applicative framework comprising generic adaptable software structures for the creation of the online business application on any specific technology platform using the web server, the business server and the database server on which the business application is fabricated, developed, tested and deployed (e.g., P. 7, 1st Par. – Rich Internet Applications (RIAs) provide this Web application solution. Macromedia® defines RIAs as combining the best user interface functionality of desktop software applications with the broad reach and low-cost deployment of Web applications and the best of interactive, multimedia communication. Specifically, the best of the desktop includes providing an interactive user

interface for validation and formation, fast interface response times with no page refresh, common user interface behaviors such as drag-and-drop and ability to work online and offline), the applicative framework also comprising:

- o user services for managing a business application user interface, relying on a XInternet one web page application pattern (e.g., P. 26, 5th Par., 1st through 3rd bullets – Allow developers to write applications using familiar development models to utilize and extend their current skills without requiring them to adopt entirely new or different skills; Use standard and standards-based technologies; Use industry specific programming models and patterns), on a workstation having a browser interface to access the business application online from the web server on which business application web services are deployed (e.g., Figure 2 – Rich Internet Application Spectrum; P. 10, 1st Par. – Figure 2 shows the spectrum of potential uses for Rich Internet Applications. It is broad, ranging from externally facing interactive sites, to customer and partner facing applications, to internal enterprise and departmental applications), the business application user interface being a dynamic web page avoiding web page transitions for user experience (e.g., P. 1, 2nd Par. – Macromedia® has developed technology and tools that enable new kinds of engaging, highly interactive, applications and user experiences; P. 3, 5th Par. – But a

new approach is needed to represent these more complex processes, one which reduces the number of steps or page-flips (avoiding web page transitions) and enables a higher degree of interactivity within the user interface), the user services comprising one web page application components library (e.g., Figure 4 – Macromedia® Flex Presentation Tier – element of 'Flex Class Library'; P. 29, 2nd Par., Lines 10-13 – *Flex* comes with a class library consisting of components such as containers, controls, etc, and managers, which are services that are commonly used and simplify the creation of rich applications) for displaying the business application user interface on the browser interface (e.g., P. 3, 5th Par. – But a new approach is needed to represent these more complex processes, one which reduces the number of steps or page-flips and enables a higher degree of interactivity within the user interface. In many cases, a highly interactive single screen interface can represent these complex, multi-step or non-linear workflows directly and intuitively) and for communicating between the business application user interface displayed in the browser interface and the business application web services deployed on the web server (e.g., P. 9, 3rd bullet – Provide an engaging, highly interactive presentation layer to underlying Web Services; P. 21, 3rd Par. – RIAs are applicable within an enterprise for providing an integrated single screen view into legacy systems, business data

visualization, e-learning and information portals, or in serving as a presentation layer to Web Services-based applications), the one web page application components library providing bi-directional communications between the workstation and the web server (e.g., P. 5, 1st Par. – What's needed is the ability to have highly interactive and locally intelligent client-side applications that can respond to user input and change their state or interface without the need for a full-page refresh or interruptive communications with a server).

Duhl does not explicitly disclose the followings:

- a business server connectable to the communication network;
- a database server connectable to the communication network; and
- business services for managing business application logic and communications between the business application online web services, the business services being implemented on the business server, the applicative framework and system components of the third party software system infrastructure, the business services comprising generic adaptable components having interface application components, core application components, utility application components and task application components being used to insure code reusability, adaptability, uniformity, isolation, stability, robustness, scalability and performance; and

- data services for managing online business application data access logic and communications between the business services and the third party database management system components on the database server upon request of the business server on which the business services are implemented, the data services comprising generic adaptable database access components having database scripts to automatically assist the creation of application database tables and stored procedures required to access and manage application data on the database server.

However, in an analogous art of *Attribute Dictionary in a Business Logic Services Environment*, Bowman-Amuah discloses the followings:

- a business server (e.g., Col. 34, Lines 24-28) connectable to the communication network (e.g., Fig. 16, element Network Connections);
- a database server (e.g., Col. 34, Lines 24-28) connectable to the communication network (e.g., Fig. 16, element Network Connections); and
- business services for managing business application logic (e.g., Fig. 12, elements of Business Logic, Directory Services) and communications between the business application online web services (e.g., Col. 107, Lines 8-11), the business services being implemented on the business server (e.g., Fig. 12, elements of Information, Database), the applicative framework and system components of the third party software system infrastructure (e.g., Col. 37, Lines 39-42), the business services comprising generic adaptable components having interface application

components (e.g., Fig. 40, element 4006), core application components (e.g., Col. 24, Lines 19-24), utility application components (e.g., Col. 36, Lines 4-7; Col. 59, Lines 14-16) and task application components (e.g., Fig. 12, element System Services – Task) being used to insure code reusability, adaptability, uniformity, isolation, stability, robustness, scalability and performance (e.g., Col. 125, Lines 46-52); and

- data services (e.g., Col. 88, Lines 46-57) for managing business application data access logic (e.g., Col. 100, Lines 62-64) and communications (e.g., Fig. 16, element Network Connections) between the business services (e.g., Col. 126, Lines 60-65; Col. 199, Lines 10-13) and the third party database management system components (e.g., Col. 52, Lines 32-34) on the database server (e.g., Col. 34, Lines 24-28) upon request of the business server (e.g., Col. 34, Lines 24-28) on which the business services are implemented, the data services comprising generic adaptable database access components (e.g., Col. 51, Lines 55-64) having database scripts (e.g., Col. 104, Lines 36-40) to automatically assist the creation of application database tables (e.g., Col. 278, Lines 30-33; Fig. 126, creates) and stored procedures (e.g., Col. 278, Lines 50-54) required to access and manage application data on the database server.

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to combine the teachings of Bowman-Amuah into the Duhl's system to further provide the followings:

- a business server connectable to the communication network;

- a database server connectable to the communication network; and
- business services for managing business application logic and communications between the business application online web services, the business services being implemented on the business server, the applicative framework and system components of the third party software system infrastructure, the business services comprising generic adaptable components having interface application components, core application components, utility application components and task application components being used to insure code reusability, adaptability, uniformity, isolation, stability, robustness, scalability and performance; and
- data services for managing online business application data access logic and communications between the business services and the third party database management system components on the database server upon request of the business server on which the business services are implemented, the data services comprising generic adaptable database access components having database scripts to automatically assist the creation of application database tables and stored procedures required to access and manage application data on the database server in Duhl system.

The motivation is that it would further enhance the Duhl's system by taking, advancing and/or incorporating Bowman-Amuah's system which offers significant advantages for software patterns and more particularly to a facility for

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encapsulating architectural mechanisms within business objects as once suggested by Bowman-Amuah (e.g., Col. 1, Lines 19-21).

19. **As to claim 17** (incorporating the rejection in claim 16) (Original), Duhl discloses the applicative framework system wherein the third party software system infrastructure comprises a MICROSOFT .NET framework (e.g., P. 6, 3rd Par., 10th bullet – Access multiple middle tier services (both .NET® or Java®) and backend data stores; P. 17, 4th Par., Lines 1-2 – The site is built as a full Macromedia Flash MX application connected via Flash Remoting and .Net services to a full content management system) and Bowman-Amuah discloses COM+ service components (e.g., Col. 104, Lines 13-14, 17-21).

20. **As to claim 18** (incorporating the rejection in claim 16) (Original), Bowman-Amuah discloses the applicative framework system wherein the interface application components comprise function means for performing the following operations to help create a normalized data model (e.g., Col. 276, Lines 50-54):

- creating, inserting, updating and deleting main objects (e.g., Col. 177, Lines 24-27; Col. 277, Lines 29-34); creating, inserting, updating and deleting main object related objects (e.g., Col. 177, Lines 24-27; Col. 277, Lines 29-34);
- creating, inserting, updating and deleting main object links to the related objects (e.g., Fig. 42, element of Business Entity Component; Fig. 50,

elements of "Workflow", "Class Diagram"); finding a list of the main objects (Fig. 159, element 15900; Col. 277, Lines 29-34, 35-37; Col. 177, Lines 56-58; Col. 259, Lines 15-21);

- selecting in the list one of the main objects (e.g., Col. 177, Lines 56-58; Col. 259, Lines 15-21); creating, inserting, updating and deleting main object operations (e.g., Col. 177, Lines 56-58; Col. 259, Lines 15-21; Col. 277, Lines 29-34, 35-37); creating, inserting, updating and deleting main object related object operations (e.g., Col. 10, Line 56 through Col. 11, Line 2; Col. 277, Lines 29-34);
- creating, inserting, updating and deleting object de-normalized views (e.g., Col. 276, Lines 55-59); and
- creating, inserting, updating and deleting application menus (Fig. 40, elements 3906, 4006, 3908; Col. 130, Lines 21-24).

21. **As to claim 19** (incorporating the rejection in claim 16) (Original), Bowman-Amuah discloses the applicative framework system wherein the core application components comprise function means for performing the following operations:

- managing business application workflow (e.g., Fig. 12, element of Workflow; Fig. 39, element 3902; Col. 116, Lines 5-7, 14-17) and handling business application architectural aspects (e.g., Fig. 36, element 3604; Col. 127, Lines 48-53), the architectural aspects transaction management (Col. 199, Lines 25-29), error management (e.g., Col. 101, Lines 61-64;

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Fig. 174, element 17408; Col. 291, Lines 37-39) and diagnostic management (e.g., Col. 265, Line 41);

- implementing business application tasks and rules (e.g., Fig. 12, elements of System Services – Task, Business Logic; Col. 199, Lines 1-6);
- managing data services workflow transactions (e.g., Fig. 26, elements 2606, 2608; Fig. 179; Fig. 182; Fig. 185; Fig. 188); and
- implementing database connections (e.g., Fig. 24, element 2402; Col. 84, Lines 11-25).

22. **As to claim 20** (incorporating the rejection in claim 16) (Original), Bowman-Amuah discloses the applicative framework system wherein the utility application components (e.g., Col. 36, Lines 4-7; Col. 59, Lines 14-16) comprise an exception manager to manage warnings and errors (e.g., Col. 101, Lines 61-64; Fig. 174, element 17408; Col. 291, Lines 37-39), a diagnostic manager to diagnose the business application (e.g., Col. 265, Line 41) and to recover from errors (Fig. 30, element 3000 – Database Recovery; e.g., Col. 54, Lines 1-6), an email manager to handle electronic communications (e.g., Col. 73, Lines 1-33), a report manager to produce reports (e.g., Fig. 13, element 1316; Fig. 28, element 2880; Fig. 29; Fig. 31, element 3102), configuration files to replace old registry settings (e.g., Col. 26, Lines 64-65; Col. 27, Lines 48-59; Col. 259, Lines 15-21), and common functions means to provide basic reusable functions (e.g., Col. 11, Lines 3-6).

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23. **As to claim 21** (incorporating the rejection in claim 16) (Original), Bowman-Amuah discloses the applicative framework system (e.g., Figs. 10-12; Col. 31, Lines 52-67) wherein the task application components comprise a security manager to manage access rights validations (e.g., Col. 61, Lines 20-25; Col. 63, Lines 1-2) to the business application (e.g., Col. 52, Line 52 through Col. 53, Lines 6) and a reference data manager supporting generic or specific reference table data models (e.g., Fig. 14, element 1410; Col. 52, Lines 30-34).

24. **As to claim 22** (Currently Amended), Duhl discloses a distributed software fabrication process for creating, while promoting strategic alignment between information technologies departments and business units objectives (e.g., P. 23, 3rd Par. – The challenge was to create a prototype platform in two months that would allow a business manager to quickly develop and change, and centrally deploy new financial products, promotions and conditions As part of the effort, they worked with the product group to prototype a visual rule construction tool that would allow a line of business manager to create rules himself without the need to go to the IT department), a business application compatible with XInternet technologies via a communication network system (e.g., P. 1, 2nd Par. – Macromedia has developed technology and tools that enable new kinds of engaging, highly interactive, applications and user experience. Using a series of case studies, this White Paper examines Rich Internet Applications (Xinternet technologies) – what they are, why they're needed, who can use them and the business benefits available to companies

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that employ them; P. 26, 4th Par. – To meet the needs of IT organizations these tools will have to allow them to continue to work they way that they already do and not force them to rip out and replace legacy technology. These new RIA tools will need to provide the features that enhance IT developer's abilities to be more creative and to accomplish RIA development with same or less effort than the tools they use to create other types of applications; What is required are the tools that can help developers in Global 2000 companies achieve these objectives without encountering the difficulties or trying to write RIAs using just 3GL code,; P. 27, 2nd Par., Lines 7-10 – Macromedia® is delivering technology for rich Internet applications now and in the first half of 2004 that leverages the ubiquity and cross platform and device support of the Flash player, and works with the hardware and infrastructure that already exists), the software fabrication process comprising the steps of:

- displaying a software factory (e.g., P.28, Table 2 – Rich Internet Application Development Profiles; P. 29, Figure 4 – Macromedia® Flex Presentation Tier) through a browser interface of a client workstation connectable to the communication network (e.g., P. 8, 3rd Par. – Because of their architecture and capabilities, RIAs have the potential to fundamentally change the way companies engage and interact with their Web users, leading to more effective user experiences with top- and bottom-line results), the software factory allowing a user to fabricate the business application in response to business need specifications, the software factory being displayed in the browser interface from factory

building files (e.g., Figure 4 – Macromedia® Flex Presentation Tier – element of 'Flex Class Library'; P. 29, 2nd Par., Lines 10-13 – *Flex* comes with a class library consisting of components such as containers, controls, etc, and managers, which are services that are commonly used and simplify the creation of rich applications);

- providing the factory building files from a web server to the client workstation and controlling the software factory displayed in the browser interface of the client workstation (e.g., P. 29, Figure 4 – Macromedia® Flex Presentation Tier – J2EE® and .NET®);
- defining a solution containing the business application via the software factory, the software factory comprising a first tool having components for entering solution parameters (e.g., P. 16, 4th Par., Lines 7-10 – XML houses the bulk of the product information, which is all now managed in a content management system allowing *FootJoy*® to more easily update the product content or change the formulas and criteria weights used in the recommendations);
- validating the solution via the software factory, the software factory comprising a third tool having components for previewing the solution online by automatically generating a working prototype of the business application using dynamic database simulation means for testing the working prototype of the business application online and communication components for feedback messages between users testing the online working prototype of the business application and users constructing the

solution (e.g., P. 7, 1st Par. – Rich Internet Applications (RIAs) provide this Web application solution. Macromedia® defines RIAs as combining the best user interface functionality of desktop software applications with the broad reach and low-cost deployment of Web applications and the best of interactive, multimedia communication. Specifically, the best of the desktop includes providing an interactive user interface for validation and formation, fast interface response times with no page refresh, common user interface behaviors such as drag-and-drop and ability to work online and offline);

- generating code offline via the software factory to form an initial and operational version of the business application to be supplied as a normalized input to a regular desktop development system (e.g., P. 7, 1st Par. – Rich Internet Applications (RIAs) provide this Web application solution. Macromedia® defines RIAs as combining the best user interface functionality of desktop software applications with the broad reach and low-cost deployment of Web applications and the best of interactive, multimedia communication), the code forming the business application comprising an applicative framework supplying a generic dynamically adaptable N-Tier client-server object-oriented applicative infrastructure constructed on top of a third party software system infrastructure (e.g., P. 8, 1st Par. – An RIA provides a strong technical platform that effectively restores the client's abilities to be more like that of desktop software applications, or a traditional client in a client/server system; It fits into the

traditional n-tier development process and integrates into legacy environments to extend existing applications without the need to rework then; Figure 4 – Macromedia® Flex Presentation Tier – element of 'Flex Class Library'; P. 29, 2nd Par., Lines 10-13 – *Flex* comes with a class library consisting of components such as containers, controls, etc, and managers, which are services that are commonly used and simplify the creation of rich applications) to support the business application on any specific technology platform.

Duhl does not explicitly disclose the followings:

- constructing the solution using business models in relation with the solution parameters via the software factory, the software factory comprising a second tool having components for designing basic characteristics of the solution and a business domain model of the business application having a main entity and related entities, the main entity establishing relationships with the related entities, the main entity and the related entities having attributes and actions, the second tool also comprising components for designing a menu Of the business application, specific functions of the business application, and functional descriptions of the business application; and
- determining a state of operability and profitability of the solution by following a project go/no go type workflow to reduce cost and time for project definition and approval and to improve strategic alignment between information technologies and business units objectives.

However, in an analogous art of *Attribute Dictionary in a Business Logic Services Environment*, Bowman-Amuah discloses the followings:

- constructing the solution using business models in relation with the solution parameters via the software factory, the software factory comprising a second tool having components for designing basic characteristics of the solution (e.g., Fig. 42, elements of "Other Patterns", "Other Frameworks"; Fig. 50, element 5008) and a business domain model of the business application having a main entity and related entities (e.g., Fig. 42, element of Business Entity Component; Fig. 50, elements of "Workflow", "Class Diagram"), the main entity establishing relationships with the related entities (e.g., Fig. 104; Col. 232, Line 53 through Col. 233, Line 49), the main entity and the related entities having attributes and actions (e.g., Col. 10, Line 56 through Col. 11, Line 2), the second tool also comprising components for designing a menu Of the business application (e.g., Fig. 40, elements 3906, 4006, 3908), specific functions of the business application (e.g., Fig. 45; Col. Lines 30-31, 58-67), and functional descriptions of the business application (e.g., Fig. 49, element of Detailed Design); and
- determining a state of operability (e.g., Col. 23, Lines 1-4) and profitability of the solution (e.g., Col. 25, Lines 15-19) by following a project go/no go type workflow to reduce cost (e.g., Col. 116, Lines 5-7, 14-17) and time for project definition and approval (e.g., Col. 116, Lines 5-7, 14-17) and to improve strategic alignment between

information technologies and business units objectives (e.g., Fig. 48 – Business Perspective vs. Systems and Technology Perspective; Col. 16, Line 66 through Col. 17, Line; 4; Fig. 48; Col. 162, Lines 16-19).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to combine the teachings of Bowman-Amuah into the Duhl's system to further provide the followings:

- constructing the solution using business models in relation with the solution parameters via the software factory, the software factory comprising a second tool having components for designing basic characteristics of the solution and a business domain model of the business application having a main entity and related entities, the main entity establishing relationships with the related entities, the main entity and the related entities having attributes and actions, the second tool also comprising components for designing a menu Of the business application, specific functions of the business application, and functional descriptions of the business application; and
- determining a state of operability and profitability of the solution by following a project go/no go type workflow to reduce cost and time for project definition and approval and to improve strategic alignment between information technologies and business units objectives in Duhl system.

The motivation is that it would further enhance the Duhl's system by taking, advancing and/or incorporating Bowman-Amuah's system which offers significant advantages for software patterns and more particularly to a facility for

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encapsulating architectural mechanisms within business objects as once suggested by Bowman-Amuah (e.g., Col. 1, Lines 19-21).

25. **As to claim 23** (incorporating the rejection in claim 1) (Original), Duhl discloses the distributed fabrication system wherein the browser interface is a container controller (e.g., P. 29, 2nd Par., Lines 10-13 – Flex comes with a class library consisting of components such as containers, controls etc. and managers, which are services that are commonly used and simplify the creation of rich application).

26. **As to claim 24** (incorporating the rejection in claim 16) (Original), Duhl discloses the applicative framework system wherein the browser interface is a container controller (e.g., P. 29, 2nd Par., Lines 10-13 – Flex comes with a class library consisting of components such as containers, controls etc. and managers, which are services that are commonly used and simplify the creation of rich application).

27. **As to claim 25** (incorporating the rejection in claim 22) (Original), Duhl discloses a distributed software fabrication process wherein the browser interface is a container controller (e.g., P. 29, 2nd Par., Lines 10-13 – Flex comes with a class library consisting of components such as containers, controls etc. and managers, which are services that are commonly used and simplify the creation of rich application).

Conclusion

28. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Kayam et al., System and Associated Methods for Software Assembly (Pub. No. US 2004/0268296 A1)
- Zondervan et al., *System, Method and Computer Program Product for Application Development Using a visual Paradigm to combine existing Data and Application* (Pub. No. US 2003/0115572 A1)
- M. R. Robinson, *Method and System for Creating Reusable Software Components through a Uniform Interface* (Pub. No. 2004/0205692 A1)

29. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ben C. Wang whose telephone number is 571-270-1240. The examiner can normally be reached on Monday - Friday, 8:00 a.m. - 5:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on 571-272-3695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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SUPERVISORY PATENT EXAMINER

BCW 

October 10, 2007